

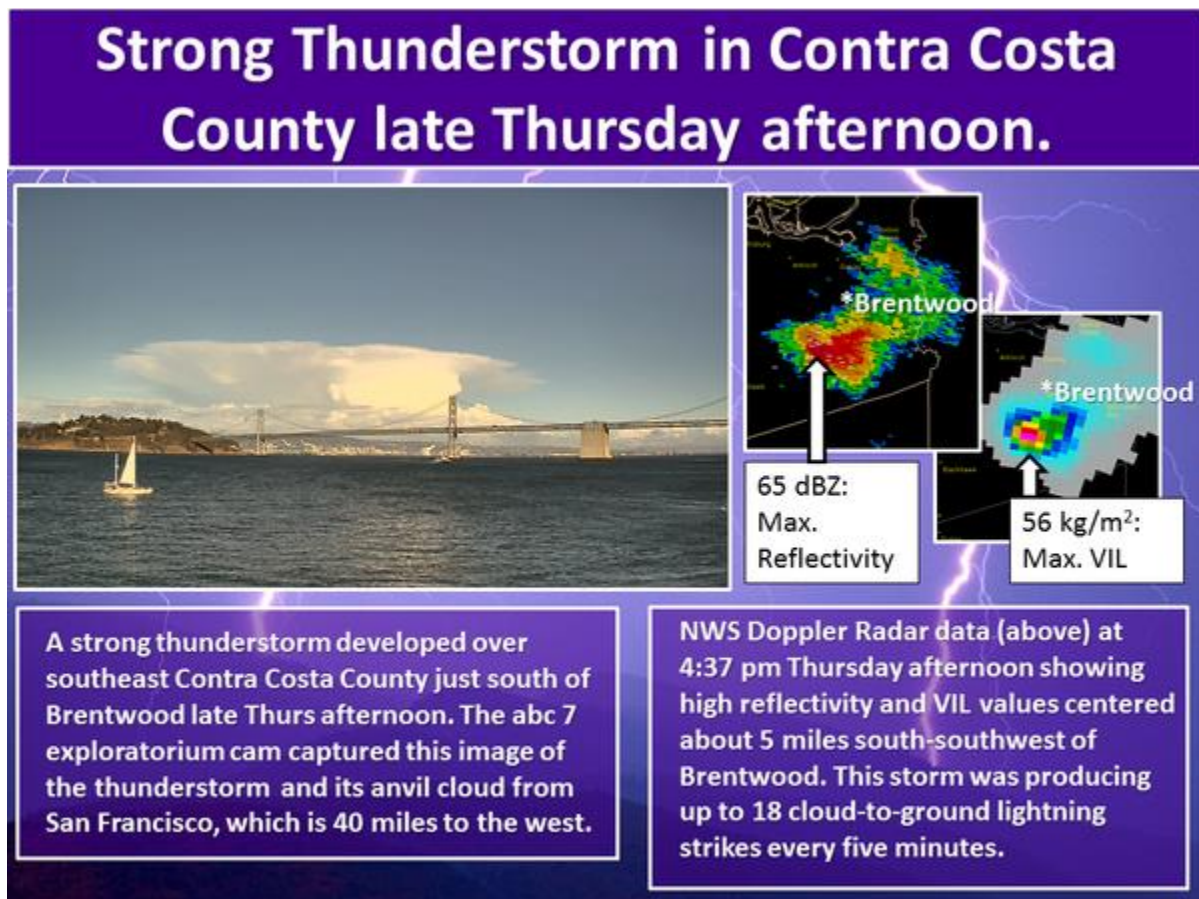
October 2015 Regional Climate Summary

For the San Francisco Bay Area and Monterey Bay Area

October 2015 was a dry and very warm month. Nineteen climate stations experienced their warmest October on record and another six locations had their second warmest (including San Francisco Downtown). Precipitation totals for the month were well below normal across the entire region. Some locations, including San Francisco, had no measurable rainfall. This was only the 14th rain-free October in San Francisco since rainfall records began in the City in 1849 (167 years).

October began with an upper low located near the California coast. A frontal boundary associated with this low produced light amounts of rain across portions of the region on Thursday, October 1, mainly south and east of the Golden Gate. The Salinas Airport and Gilroy received the most rain on the 1st with 0.35" and 0.40" respectively.

During the late afternoon of October 1, a strong thunderstorm developed along the frontal boundary over eastern Contra Costa County. The anvil cloud associated with this thunderstorm was visible throughout the Bay Area.



Social media post on the afternoon of October 1, providing information on the strong thunderstorm that developed south of Brentwood.



Photo of the October 1st East Bay thunderstorm taken from Alviso, looking to the northeast. Photo: John Eaton

An upper low dropped south out of the Pacific Northwest and into Central California on the night of Saturday, October 3. Bands of showers and thunderstorms developed over northern California and then rotated from east to west across the North Bay and Contra Costa County during the early morning hours of Sunday October 4. Rainfall amounts across the affected area were light and generally less than a tenth of an inch, although the Napa Airport picked up 0.20".

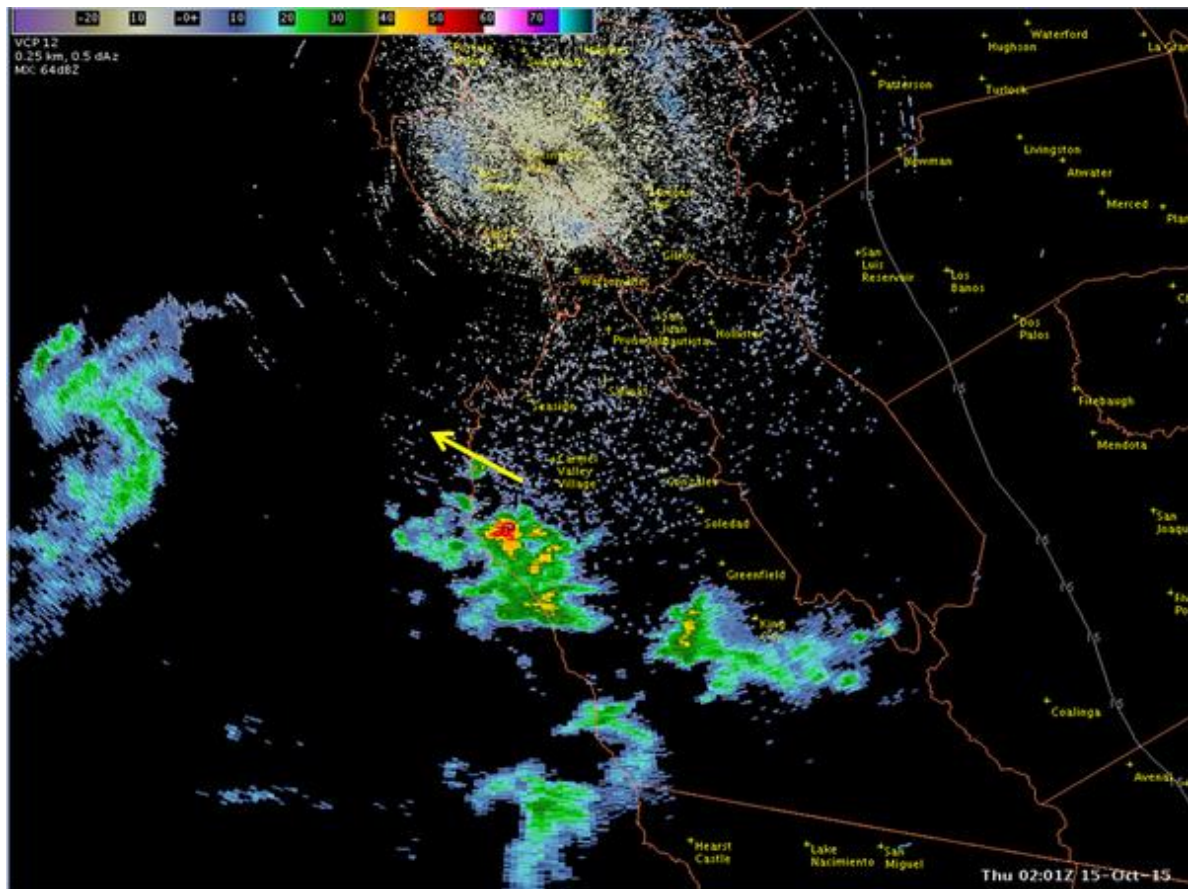
A wild fire broke out in northern San Benito County on Monday, October 12. The “Cienega Fire” went on to burn 670 acres near the community of Paicines, south of Hollister before it was contained later that week.



Smoke from the Cienega fire as seen from Marina. Photo: Matt Mehle

Strong high pressure developed over California by October 12, and by Tuesday, October 13 temperatures rose into record warm territory. Two daily record high temperatures were tied on the 13th – in Kentfield and San Jose. The 13th was the warmest day of the month across most of the region.

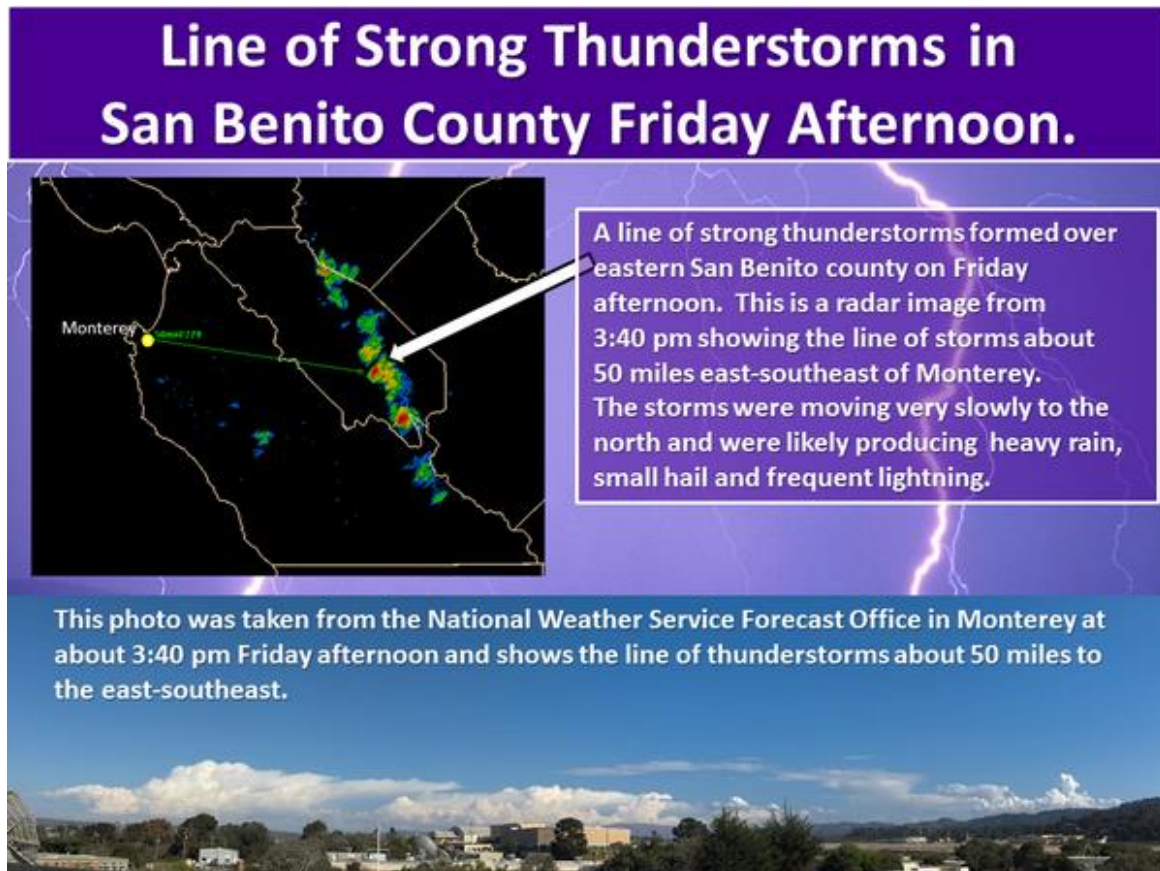
The upper low that had produced showers and thunderstorms across the North and East Bay early on October 4 made its way east and nearly reached West Texas by October 8. The low then reversed course and travelled back to the west, reaching a point to the west of the Baja Peninsula by October 12. From there the low gradually lifted to the northeast, approaching the south-central California coast by the afternoon of Wednesday, October 14. The low generated thunderstorms over southwest Monterey County late on the afternoon of the 14th. By 7 pm that evening showers and thunderstorms had made their way as far north as Point Sur on the Monterey county coast.



KMUX radar showing a thunderstorm near Point Sur on the evening of October 14. This thunderstorm was moving towards the northwest.

Isolated showers and thunderstorms continued through the night of October 14 and into Thursday, October 15. Although light rain fell as far north as Concord on October 15, most shower and thunderstorm activity on the 14th and 15th was confined to areas from Santa Cruz and Santa Clara counties southward. Mostly just trace amounts of precipitation were reported.

The upper low was slow to move east and a line of strong thunderstorms developed over southern San Benito County on the afternoon of Friday, October 16.



Social media graphic with information on the line of heavy thunderstorms over San Benito County on the afternoon of October 16.

Over the weekend of October 17 and 18 a weak upper level trough moved across northern and central California. This upper trough produced isolated showers across the North and East Bay that weekend, and as far south as Monterey and Carmel by late Sunday Night. In addition, a thunderstorm with small hail developed in northern Napa County shortly after midnight on Saturday Night. Weekend rainfall was light with most climate stations receiving only a trace.

Widespread dense fog occurred across the San Francisco Bay Area during the early morning hours of Monday, October 26. Dense fog was reported at airports in Sonoma, Napa, Alameda and San Mateo counties.

One more weak weather system produced isolated light rain showers from Tuesday October 27 into the morning of Wednesday October 28. Rainfall amounts were mostly on the order of a few hundredths.



Double rainbow over the Bay Bridge on the morning of October 28. Photo: Scot Hampton

October ended warm and dry. Temperatures climbed well above normal on Halloween and San Jose set a new record high temperature on the 31st.

October Temperatures

October was a very warm month overall. Average high and low temperatures were above normal at all climate stations and significantly warmer than normal at several locations. **October 2015 was the warmest October on record for 19 climate stations across the San Francisco Bay Area and Monterey Bay Area:**

Location	October 2015 Average Temp*	Previous Warm Oct Avg. Temp and Year	Years of Records
Antioch	70.4	69.4 in 1991	61
King City	68.1	66.7 in 2014	83
Kentfield	67.4	66.2 in 1992	111
Livermore	68.4	68.1 in 1958	113
Monterey	65.1	65.0 in 2014	69
Napa	67.8	66.8 in 2014	117
Newark	67.6	66.6 in 2014	73
Oakland Airport	65.2	65.0 in 1974	52
Redwood City	66.8	65.4 in 1980	85
Richmond	66.4	66.0 in 1959	66
Saint Helena	68.3	66.5 in 1959	107
Salinas	66.3	65.9 in 1983	57
Salinas Airport	66.4	66.4 in 1983 (tie)	83
San Francisco Airport	65.6	65.4 in 1992	71
San Jose	67.7	67.2 in 1992	116
San Rafael	67.7	67.6 in 1959	66
Santa Cruz	66.1	65.6 in 2014	123
Sonoma	66.4	65.9 in 2003	67
Watsonville	67.5	65.1 in 2014	102

* Average Temperature = (Average High Temperature + Average Low Temperature) / 2

In addition, six climate stations, including San Francisco, experienced their second warmest October on record:

Location	Warmest Oct Avg Temp & Year	October 2015 Average Temp	Years of Records
Berkeley	66.1 in 2014	66.0	117
Cloverdale	69.8 in 2014	69.3	60
Petaluma Airport	68.5 in 1929	66.4	101
Oakland Museum	68.8 in 1992	68.1	45
Pinnacles National Park	67.3 in 1991	66.5	77
San Francisco Downtown	66.7 in 1992	65.6	141

The record warm October occurred without frequent or sustained heat events. Only three daily high temperature records were set or tied across the region during the month. Instead, October was characterized by temperatures that were persistently above average by a moderate amount. For instance, the high temperature at the San Francisco Airport was warmer than average on 23 of 31 October days and the overnight low temperature was warmer than average on all but two days. This persistent warmth was due at least in part to the ongoing warmer-than-normal sea surface temperatures along the California Coast.

October Regional Temperature Summary

Location	Average High	Normal High	Departure from Normal	Average Low	Normal Low	Departure from Normal
Sonoma County Airport	83.1	76.4	6.7	49.3	45.0	4.3
Napa Airport	79.3	74.1	5.2	48.9	43.1	5.8
San Rafael	80.0	72.7	7.3	55.3	51.0	4.3
San Francisco Downtown	72.9	69.2	3.7	58.3	53.7	4.6
San Francisco Airport	73.7	70.4	3.3	57.4	53.2	4.2
Redwood City	79.0	74.2	4.8	54.5	49.9	4.6
Concord Airport	83.5	76.7	6.8	55.7	51.1	4.6
Oakland	77.7	71.7	6.0	58.5	54.4	4.1
Oakland Airport	75.1	69.7	5.4	55.3	51.3	4.0
Livermore Airport	85.5	76.4	9.1	56.3	49.5	6.8
Hayward Airport	75.9	71.5	4.4	56.6	53.6	3.0
Moffett Federal Airfield	77.8	73.4	4.4	56.7	53.8	2.9
San Jose	79.1	74.0	5.1	56.3	52.5	3.8
Watsonville Airport	79.4	72.3	7.1	54.5	48.3	6.2
Monterey	74.4	68.2	6.2	55.8	50.8	5.0
Monterey Airport	72.7	67.2	5.5	55.6	50.1	5.5
Salinas Airport	77.7	72.7	5.0	55.1	49.7	5.4

Daily Temperature Records for October 2015			
Date	Location	Record Max Temp	Previous Record and Year
10/13	Kentfield	92	92 in 2014
10/13	San Jose	93	93 in 2010
10/31	San Jose	85	82 in 1949

October Precipitation:

Although rain occurred across at least a portion of the region on several October days, rainfall amounts were light and scattered. All climate stations ended the month with well below normal rainfall. Only Hollister and Carmel Valley managed to accumulate at least half their October average. All other locations picked up less than half their averages. Several climate stations received no measurable rain during October including San Francisco Downtown. Since 1849 there have been only 13 other Octobers in which San Francisco's rain total was zero.

October Regional Precipitation Summary

Location	October Rainfall	Normal Oct Rain	Percent of Normal
North Bay			
Angwin	0.12	2.19	5
Calistoga	0.10	2.11	5
Kentfield	0.01	2.26	0
Muir Woods	0.02	1.98	1
Napa	0.02	1.48	1
Napa Airport	0.20	0.97	21
Occidental	0.10	2.87	3
Petaluma Airport	0.06	1.43	4
Saint Helena	0.11	1.85	6
San Rafael	0.02	1.49	1
Sonoma County Airport	0.09	2.03	4
Sonoma	0.00	1.64	0
San Francisco Peninsula			
Half Moon Bay	0.16	1.56	10
Palo Alto	0.05	0.76	7
Redwood City	0.02	1.06	2
San Francisco Airport	0.00	0.95	0
San Francisco Downtown	0.00	1.12	0
East Bay			
Antioch	0.00	0.62	0
Berkeley	0.00	1.37	0
Concord	0.05	0.82	6
Concord Airport	0.01	0.87	1
Fremont	0.02	0.85	2
Hayward Airport	0.00	1.00	0
Livermore	0.02	0.85	2
Livermore Airport	0.01	0.92	1
Mount Diablo Junction	0.09	1.42	6
Newark	0.04	0.81	5
Oakland	0.00	1.37	0
Oakland Airport	0.00	1.20	0
Richmond	0.03	1.44	2

South Bay and Santa Cruz County	October Rainfall	Normal Oct Rain	Percent of Normal
Ben Lomond	0.03	2.35	1
Gilroy	0.40	0.92	43
Moffett Federal Airfield	0.05	0.64	8
Mount Hamilton	0.50	1.42	35
San Jose	0.05	0.80	6
Santa Cruz	0.08	1.45	6
Watsonville	0.06	1.10	5
Watsonville Airport	0.05	0.92	5
Monterey and San Benito Counties			
Big Sur Station	0.56	2.11	27
Carmel Valley	0.71	0.93	76
Hollister	0.40	0.69	58
King City	0.19	0.63	30
Monterey	0.16	1.06	15
Monterey Airport	0.13	0.93	14
Pinnacles National Park	0.25	0.86	29
Salinas	0.23	0.64	36
Salinas Airport	0.20	0.58	34

Miscellaneous October Climate Information:

Monthly Ranks for Downtown San Francisco		
Average High Temperature	72.9 degrees	9 th warmest out of 141 years
Average Low Temperature	58.3 degrees	2 nd warmest out of 141 years
Average Temperature	65.6 degrees	2 nd warmest out of 141 years
Precipitation	0.00 inches	Driest out of 167 years (tied with 13 other years)

Monthly Extremes for Select Locations			
Location	Max Temp: Warmest Day(s)	Min Temp: Coolest Day(s)	Precipitation: Wettest Day(s)
Sonoma County Airport	10/13	10/22 10/29	10/28
	96 degrees	43 degrees	0.07 inches
San Francisco Downtown	10/13	10/24	n/a
	87 degrees	55 degrees	
Livermore Airport	10/13	10/30	10/01
	101 degrees	47 degrees	0.01 inches
San Jose	10/13	10/30	10/01
	93 degrees	49 degrees	0.03 inches
Salinas Airport	10/08	10/30	10/01
	90 degrees	46 degrees	0.16 inches

Note: Climatological data included in this document is preliminary. For official certified climatological data please contact the National Climatic Data Center at 828-271-4800 or <http://www.ncdc.noaa.gov>. Official values as determined at the above web site may take several months for authentication and publication.